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JUN 0 2 2006

AMENDMENTS TO THE CLAIMS

1. – 2. (cancelled)

3. (currently amended) A high linearity, low power, low voltage active mixer ~~as in claim 2~~ for RF applications, comprising:

an RF transconductance amplifier to transform the input voltage to current, the transconductance amplifier having a constant transconductance over a wide range of input differential voltages, resulting in high linearity in terms of both IIP2 and IIP3;

a mixing stage to down-convert the RF current to the desired IF;

an ac-coupling stage between the RF transconductance amplifier and the mixing stage; and

an IF stage that converts an information bearing signal back to voltage,

wherein the RF transconductance amplifier ~~consists of~~ comprises:

a floating voltage source;

a capacitive feed-forward path; and

a p-channel single transistor transconductor and an n-channel single transistor transconductor ~~transconductors~~.

4. (currently amended) A high linearity, low power, low voltage active mixer comprising a transconductor as in claim 3, wherein ~~the~~ a body-effect of the p-channel single transistor transconductor ~~transconductance~~ and of the n-channel single transistor transconductor is eliminated to improve the linearity by obviating the threshold-voltage-modulation assisted nonlinearity.

5. (currently amended) A high linearity, low power, low voltage active mixer as in claim 3 ~~comprising a~~ wherein the floating voltage source in the RF transconductance amplifier ~~that~~ allows the low voltage operation of the RF transconductor ~~stage~~ amplifier.

6. (currently amended) A high linearity, low power, low voltage active mixer as in claim 3, wherein the RF transconductance ~~stage~~ amplifier is self-biased and does not require any additional biasing circuitry.

7. (original) A high linearity, low power, low voltage active mixer as in claim 3, wherein the concept of current reuse has been introduced to decrease the power consumption of the design.

8. (currently amended) A high linearity, low power, low voltage active mixer ~~as in claim 1~~ for RF applications, comprising:

an RF transconductance amplifier to transform the input voltage to current, the transconductance amplifier having a constant transconductance over a wide range of input differential voltages;

a mixing stage to down-convert the RF current to the desired IF;

an ac-coupling stage between the RF transconductance amplifier and the mixing stage; and

an IF stage that converts an information bearing signal back to voltage,

wherein the ac-coupling between the RF transconductance amplifier ~~transconductor~~ and the mixing stage blocks ~~the~~ flicker noise associated with the RF transconductance amplifier ~~transconductor~~, and hence reduces the total flicker noise at the output, which favors the design for direct conversion applications.

9.-11. (cancelled)

12. (currently amended) An RF transconductance amplifier for use in a high linearity, low power, low voltage active mixer, the RF transconductance amplifier comprising;

a floating voltage source;

a capacitive feed-forward path; and

a p-channel single transistor transconductor and an n-channel single transistor ~~transconductors~~ transconductor.

13. (currently amended) An RF transconductance amplifier as defined in claim 12 wherein ~~the~~ a body-effect of the p-channel single transistor transconductor and of the n-channel single transistor transconductor ~~transconductance~~ is eliminated to improve the linearity by obviating the threshold-voltage-modulation assisted nonlinearity.

14. (currently amended) An RF transconductance amplifier as defined in claim 12 wherein the RF transconductance ~~stage~~ amplifier is self-biased and does not require any additional biasing circuitry.

15. (currently amended) An RF transconductance amplifier, as defined in claim 12, wherein [[[a]]] the floating voltage source causes the ~~transconductor transistors~~ p-channel single transistor transcondutor and the n-channel single transistor transconductor to operate simultaneously in the active region over a wide range of input differential voltages thus resulting in improved linearity in terms of IIP2.

16. (cancelled)